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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/535,523

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Thomas W Hodge

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EXAMINER

BOESEN, AGNIESZKA

ART UNIT

PAPER NUMBER

1648

MAIL DATE

DELIVERY MODE

03/30/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/535,523	Applicant(s) HODGE ET AL.	
	Examiner AGNIESZKA BOESEN	Art Unit 1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 43-46, 49, 50 and 69-76 is/are pending in the application.
4a) Of the above claim(s) 70, 71 and 74-76 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 46, 72 and 73 is/are allowed.
- 6) ☒ Claim(s) 43, -45, 49, 50 and 69 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1648

DETAILED ACTION

The Amendment filed 1/14/2009 in response to the Office Action of 10/16/2008 is acknowledged and has been entered. Claims 43 and 46 have been amended. New claims 69-76 have been added.

Priority

The provisional application 60/427,464 to which the current application claims the benefit of the effective filing date, does not disclose the Rab9 target sequence.

Therefore, the subject matter of claims 43-46, 49, 50 and 69-76 is entitled to the benefit of priority only to application PCT/US03/37143 filed 11/18/2003 and provisional application 60/482,604.

Election/Restrictions

Applicant added new claims 70-76 which recite non-elected species of influenza A protein, Ebola protein and SEQ ID NO: 119. Applicant is informed that new claims 70-79 reciting non -elected species will be examined once the generic claim is indicated allowable. Since claim 43 is currently rejected Examiner will not search non-elected species. It is noted that new claim 69 is currently examined because the claim recites the elected species of HIV.

Claims 43-46, 49, 50, 69, 72 and 73 are examination in this Office Action. Claims 70, 71 and 74-79 are withdrawn.

Claim Objections

Objection to Claim 43 for containing reference to Table 1 **is withdrawn** in view of Applicant's amendment.

Claim Rejections - 35 USC § 102

Rejection of Claims 43-45, 49 and 50 under 35 U.S.C. 102(e) as being anticipated by Wu et al. (US Patent Application Publication 2003/0166870 A1) **is withdrawn** in view of Applicant's amendment.

New Rejection in view of Applicant's amendment

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 43-45, 49, 50 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (US Patent Application Publication 2003/0166870 A1) in view of Hanna et al. (PNAS, May 2002, Vol. 99, p. 7450-7454) as evidenced by Blot et al. (Journal of Virology, June 2003, Vol. 77, p. 6931-6945).

Wu et al. teach methods of identifying an agent that decreases binding of HIV envelope protein to CCR5 chemokine receptor thereby decreasing the HIV virus infecting the cell through the CD4 T cell receptor, the methods comprise contacting the T cell receptor host cell protein with the envelope protein of an HIV virus, the test compound and an antibody binding CCR5, and determining whether binding of the viral protein to the host protein is decreased in the presence of the test compound/agent (see claims 57-68 and [0083], [0084], [0110], [0112], [0196], [0198]). The methods taught by Wu et al. comprise expressing the host protein in a cell

Art Unit: 1648

and contacting the host protein with the HIV envelope protein and a test compound (see [0012], [0013], [0021], [0061], [0078], [0086], [0155] and [0156]. The viral protein comprises a label and the method comprises detecting the amount of the label in order to determine whether the binding of the HCV envelope protein to T cell receptor has decreased (see [0084]).

Wu et al. does not teach host protein Rab9.

Hanna et al. teach that Rab9 protein binds the vesicle cargo selection protein TIP47 and facilitates the transport of proteins from endosomes to trans Golgi network (see Abstract and Discussion). Blot provides evidence that HIV envelope glycoprotein is located in the trans-Golgi network and teaches that Rab9 bound to TIP47 interacts with the cytoplasmic tail of the HIV envelope glycoprotein subunit p41 and is critical for the incorporation of HIV envelope glycoprotein into mature virions (see the entire document).

It would have been *prima facie* obvious to provide Wu's method of identifying an agent that decreases binding of HIV envelope protein to Hanna's Rab9 protein comprising contacting Rab9 protein with the test compound and the HIV protein and determining whether binding of the HIV protein to the Rab9 protein is decreased in the presence of the test compound because Rab9 protein has been known to facilitate the transport of proteins (including viral proteins) from the endosomes to trans Golgi as taught by Hanna. It would have been obvious to substitute Hanna's Rab9 protein for Wu's T cell receptor host protein.

One would have been motivated to use Rab9 protein as a host protein in Wu' assay for identifying compounds that decrease binding of HIV protein to Rab9 host cell protein because Hanna teaches that Rab9 protein facilitates the transport of proteins from endosomes to trans

Art Unit: 1648

Golgi network and because Blot provides the evidence that HIV envelope protein is transported from the endosomes to trans Golgi where it resides.

One would have had a reasonable expectation of success to practice the claimed methods because Wu provides evidence that laboratory methods involving cell signaling have been known in the art at the time of the present invention.

Thus the invention as whole would have been *prima facie* obvious to the skilled artisan at the time when the invention was made.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fridell, PNAS, 1996, Vol. 93, p. 4421-4424) teaches that Rab proteins play a role in mediating the function of HIV viral gene, Rev, which is essential for replication of HIV. Fridell does not teach Rab9.

Conclusion

SEQ ID NO: 118 is free of prior art of record. Claims 46, 72 and 73 are allowable.

Applicant's amendment necessitated the new ground of rejections presented in this Office action. Thus, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

Art Unit: 1648

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AGNIESZKA BOESEN whose telephone number is (571)272-8035. The examiner can normally be reached on Monday through Friday from 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce Campell can be reached at 571-272-0974. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Agnieszka Boesen/
Examiner, Art Unit 1648
/Bruce Campell/
Supervisory Patent Examiner, Art Unit 1648

Application/Control Number: 10/535,523

Page 7

Art Unit: 1648